

CLAIMS

- 1 1. A method for failover of a first device to a second device in a storage network, the
2 method comprising steps of:
 - 3 detecting a failure in the first device;
 - 4 initializing a second virtual port on the second device;
 - 5 configuring the second virtual port with an identity of a first virtual port on the
6 first device; and
 - 7 servicing a set of disks owned by the first device at the second device through the
8 second virtual port.

- 1 2. The method of claim 1 wherein the step of detecting a failure comprises the step
2 of detecting a lack of a heartbeat signal from the first device at the second device.

- 1 3. The method of claim 1 wherein the step of detecting a failure comprises the step
2 of initiating a failover command.

- 1 4. The method of claim 1 wherein the step of configuring the second virtual port
2 further comprises the steps of:
 - 3 setting a node name of the second virtual port to a node name of the first virtual
4 port; and
 - 5 setting a port name of the second virtual port to a port name of the first virtual
6 port.

- 1 5. The method of claim 4 wherein the storage network comprises a Fibre Channel
2 (FC) network and wherein the node name comprises a FC World Wide Node Name.

- 1 6. The method of claim 4 wherein the storage network comprises a Fibre Channel
2 (FC) network and wherein port name comprises a FC World Wide Port Name.

1 7. The method of claim 1 wherein the first device and second device are storage
2 systems.

1 8. The method of claim 1 further comprising the step of processing, by the second
2 device, data access requests directed to the second virtual port.

1 9. The method of claim 8 further comprising the step of processing, by the second
2 device, data access requests directed to a third virtual port, the third virtual port is associ-
3 ated with a physical port.

1 10. The method of claim 9 wherein the second virtual port is associated with the
2 physical port.

1 11. The method of claim 1 wherein the second virtual port is associated with one or
2 more virtual ports associated with a physical port.

1 12. A storage system for use in a storage system cluster, the storage system compris-
2 ing:

3 a physical port adapted to communicate over a network;
4 one or more virtual ports associated with the physical port;
5 means for adapting one of the virtual ports to assume a network identity of a port
6 of a partner storage system in the storage system cluster;
7 means for acquiring control of a set of storage devices associated with the partner
8 storage system; and
9 means for servicing data access requests directed to the assumed network identity.

1 13. The storage system of claim 7 wherein the means for adapting one of the virtual
2 ports to assume a network identity of a port of a partner storage system in the network
3 further comprises:

4 means for setting a node name associated with the one virtual port to a node name
5 of the port of the partner storage system in the storage system cluster; and
6 means for setting a port name of the one of the virtual ports to a port name of the
7 port of the second computer in the network.

1 14. The storage system of claim 13 wherein the node name comprises a Fibre Chan-
2 nel World Wide Node Name.

1 15. The storage system of claim 13 wherein the port name comprises a Fibre Channel
2 World Wide Port Name.

1 16. The storage system of claim 12 wherein the port of the second computer com-
2 prises a physical port.

1 17. The storage system of claim 12 wherein the port of the second computer com-
2 prises a virtual port.

1 18. A computer readable medium, including program instructions executing on a
2 computer, the computer readable medium including instructions for performing the steps
3 of:

4 detecting, by a first device, a failure of a second device in a cluster;
5 initializing a first virtual port on the first device, the first virtual port being ini-
6 tialized with a network identity of the second device; and
7 assuming ownership, by the first device, of a set of storage devices associated
8 with the second device.

1 19. The computer readable medium of claim 18 wherein the step of initializing the
2 first virtual port further comprises the steps of:
3 setting a node name of the first virtual port to a node name associated with a port
4 on the second device; and

5 setting a port name of the first virtual port to a port name associated with a port on
6 the second device.

1 20. A storage system for use in a storage system cluster, the storage system compris-
2 ing:

3 a physical port adapted to communicate over a network;
4 a first virtual port associated with the physical port, the first virtual port adapted
5 to accept data access requests directed to the storage system; and
6 a second virtual port associated with the physical port, the second virtual port
7 adapted to assume a network identity of a failed storage system.

1 21. The storage system of claim 20 wherein the second virtual port is further adapted
2 to process data access requests directed to the network identity of the failed storage appli-
3 ance.

1 22. The storage system of claim 20 wherein the second virtual port assumes the net-
2 work identity of the failed storage system by modifying a virtual port database entry.

1 23. The storage system of claim 22 wherein the virtual port database entry comprises
2 a node name field and a port name field.

1 24. The storage system of claim 23 wherein the node name field identifies a Fibre
2 Channel (FC) World Wide Node Name associated with the second virtual port.

1 25. The storage system of claim 23 wherein the port name field identifies a Fibre
2 Channel (FC) World Wide Port Name associated with the second virtual port.